

Space Weather Forecast

Issued on Monday, 08 April 2024 at 13:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: No significant activity expected.

Analysis of Space Weather Activity over past 24 hours.

Solar Activity: Low activity with four Common-class flares observed, the strongest of these from a new developing region close to the northeast limb. There are six sunspot regions in total, with a large region in the northeast, close to centre disc, showing only limited activity. The other regions remain small and stable.

There have been no Earth-directed CME observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind was affected by two events through the last 24 hours. A previously unforecast weak CME arrived at Earth early on 08 Apr. The effects of the CME soon subsided, with a weak fast solar wind connection then connecting later in the period. Wind speeds initially followed a downward trend, but experienced limited enhancements due to both the CME arrival and onset of the high speed stream. Overall solar wind speeds have been at ambient speeds with the trend towards weakening speeds. Total magnetic field strength was weak, with slight but notable enhancements due to the two features referenced above. The north-south component was mainly weakly negative, but rotated into a positive orientation as the fast solar wind connected with the Earth. Geomagnetic activity was Quiet (Kp 1-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low activity is likely, with a slight chance of Moderate, especially later in the period.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Solar wind speeds are representative of a weak fast solar wind connection. Speeds of 400-450km/s possible through 08 and 09 Apr, prior to a decline towards background levels through 10 and 11 Apr. Geomagnetic activity is forecast to be mainly Quiet with Unsettled intervals, but increasing to Unsettled with Active intervals due to the fast wind enhancement.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background levels.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	5	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	15	20	30	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)